REMARKS

Claims 1 to 8 are pending.

Applicants respectfully requests reconsideration of the present application in view of this response.

Applicants thank the Examiner for acknowledging the claim for foreign priority and the receipt of the certified copies of the priority documents from the International Bureau.

Applicants respectfully requests that the Examiner acknowledge and consider the IDS papers, PTO-1449 forms and the references filed on June 24, 2003.

With respect to paragraph one (1) of the Office Action, claims 1, 2, 4 and 5 were rejected under 35 U.S.C. § 103(a) as unpatentable over Roux, U.S. Patent No. 6,028,888, in view of Yamamoto, U.S. Patent No. 6,252,914, and further in view of Ohgoshi, U.S. Patent No. 5,666,352.

For a claim to be rejected for obviousness under 35 U.S.C. § 103(a), the prior art must teach or suggest each feature of the claim. See Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 934 (Fed. Cir. 1990), cert. denied, 111 S. Ct. 296 (1990); In re Bond, 910 F.2d 831, 834 (Fed. Cir. 1990). Applicants respectfully submit that these criteria for obviousness are not met here.

The "Roux" reference refers to coherent demodulation in single-channel and multi-channel coherent demodulation devices without any knowledge of the transmitted signal. Demodulation in the "Roux" reference occurs without any pilot signal. Estimation of the phase shift occurs by applying a predetermined function to produce a signed value from the argument of a summed signal. The summed signal is obtained from the received signal via quadrature demodulation, complex despreading and summing over N samples. The phase shift estimate is used in a phase-locked loop such that the system converges towards a null error. The residual static phase ambiguity introduced by applying the predetermined function is resolved. A plurality of single-channel and multi-channel coherent demodulation devices is used in a receiving system using a plurality of diversity paths. (Abstract, lines 1 to 15).

Additionally, the "Roux' reference states that a demodulation device has the task of regenerating the input signal from the signal that it receives such that the signal received corresponds to the signal transmitted affected by various disturbances. In the "Roux"

reference, the type of disturbance of interest here is a phase shift. After the received signal is demodulated, the resulting demodulated signal is a complex signal subject to phase rotation that corresponds precisely to the phase shift. The phase shift is due to the propagation medium and to the modulation and demodulation operations. Also, the phase shift is due to the asynchronism of the local oscillators feeding the modulator and the demodulator. The phase shift varies in time and it is a dynamic phenomenon. Phase shift treatment varies for single-channel and multi-channel transmission. (Col. 2, lines 24 to 39).

The "Yamamoto" reference refers to a radio-communication system in which a predistortion of the signals to be sent is implemented in a base station. A propagation characteristic of a propagation path is estimated by an automatic equalizer set in the base station, and the inverse characteristic of the propagation path is added to the down-transmission data to be transmitted to a terminal in a predistortion section in accordance with the estimation result, and the data to which the inverse characteristic of the propagation path is added is transmitted to the terminal 2 through the propagation path as transmission data. (Abstract, lines 1 to 12).

The "Ohgoshi" reference refers to a mobile CDMA communication system and a method for phase correction, in which, as characterized, the signals to be sent from a base station with the aid of a first oscillator are subjected to quadrature multiplexing. Upon receipt, an additional oscillator in each mobile station implements a quadrature detection and operates asynchronously to the first oscillator, so that signal-value errors result in the receiving signals due to a phase shift. (Col. 2, lines 38 to 47). As characterized, with the transmission of reference signals in the form of pilot signals, the phase errors in the receiver are detected, averaged and used for phase correction of the transmitted data.

In contrast, the subject matter of independent claim 1 and independent claim 4 concerns the correction of phase shifts resulting from the predistortion of the signals to be transmitted from the base station to the mobile station, since the estimation of the transmission characteristics of the forward link is not correct because of the movement of the carrier of the mobile stations. Radio signals in the base station include symbols, being code-spread using one code for each mobile station, being predistorted in accordance with the expected transmission properties regarding each mobile station, and being modulated with

regard to their phases.

Claims 1 and 4 include the features of code-despreading the radio signals transmitted from the base station, ***determining the phases of the radio signals for each of the symbols to phase demodulate the radio signals, mapping the determined phases onto a phase zone in accordance with a preestablished rule, forming an average value from a preestablished number of the determined phases, determining a phase correction factor from the average value***, and multiplying the phase correction factor by the demodulated radio signals in order to correct a phase error before the radio signals are detected.

Accordingly, there are substantial differences between the "Roux" reference and the subject matter of claims 1 and 4.

Claims 1 and 4 include determining the phases of the radio signals for each of the symbols. In contrast, the "Roux" references simply involves obtaining and summing N sampling values of the demodulated signals. In the system of the "Roux" reference, the phase of a summed signal is determined, but it does not determine of the phases of the radio signals for each of the symbols, as provided for in the context of claims 1 and 4.

Additionally, claims 1 and 4 provide that the phases of the radio signals for each of the symbols is determined to phase demodulate the radio signals. In contrast, the "Roux" reference states that the input signal is already demodulated such that the phase yield is not used for demodulation. In the "Roux" reference, the summed signal is obtained from the received signal via quadrature demodulation, complex despreading and summing over N samples such that a demodulation device has the task of regenerating the input signal from the signal that it receives, the signal received corresponds to the signal transmitted affected by a phase shift. The "Roux"reference therefore does not disclose determining the phases of the radio signals for each of the symbols to phase demodulate the radio signals, as provided for in the context of claims 1 and 4.

Also, claims 1 and 4 provide that the determined phases are mapped onto a phase zone in accordance with a preestablished rule. In contrast, the "Roux" reference does not disclose or suggest this feature. In the "Roux" reference the phase of the summed signal is shifted according to a predetermined function such that the phase shift estimate is used in a phase-locked loop, the system converges towards a null error, and the residual static phase

ambiguity introduced by applying the predetermined function is resolved. The "Roux" references does not disclose mapping the determined phases onto a phase zone in accordance with a preestablished rule, as provided for in the context of claims 1 and 4.

Furthermore, claims 1 and 4 provide that an average value is formed from a preestablished number of the determined phases and determining a phase correction factor from the average value. In contrast, the "Roux" reference states the phase of the summed signal is shifted according to a predetermined function such that this is an estimate for the phase shift and for the phase correction. An average value is determined from a phase of a summed signal in the "Roux" reference. The "Roux" references therefore does not disclose forming an average value from a preestablished number of the determined phases and determining a phase correction factor from the average value, as provided for in the context of claims 1 and 4.

There are also differences between the "Ohgoshi" reference and the subject matter of claims 1 and 4. Claims 1 and 4 include the feature of determining the phases of the radio signals for each of the symbols such that the determined phases are mapped onto a phase zone in accordance with a preestablished rule. In the "Ohgoshi" reference, with the transmission of reference signals in the form of pilot signals, the phase errors in the receiver are detected, averaged and used for phase correction of the transmitted data. The transmission of a pilot signal is not even provided for in claims 1 and 4. Instead, the phase shift is determined for each symbol of the transmitted data such that the determined phases are mapped onto a phase zone, as provided for in the context of claims 1 and 4. The "Ohgoshi" references therefore does not disclose determining the phases of the radio signals for each of the symbols such that the determined phases are mapped onto a phase zone in accordance with a preestablished rule, as provided for in the context of claims 1 and 4.

Even if the "Roux" reference were combined with the "Ohgoshi" reference (the properness of which is not conceded), this would indicate the task of compensating the asynchronism between the oscillator of the modulator in the base station and the oscillator of the demodulator in the receiving station. While the "Ohgoshi" reference uses a pilot signal, the "Roux" reference accomplishes this task such that a pilot signal is not used. Additionally, the received signal is demodulated following the phase correction in the "Ohgoshi" reference

while in the "Roux" reference the received signal is demodulated before the phase correction. Also, the phase correction in the "Ohgoshi" reference occurs through multiplication while in the "Roux" reference it occurs through subtraction in the context of a feedback. The compensation of the asynchronism requires a more complex procedure when doing without the transmission of a pilot signal than when the pilot signal is used. Accordingly, it is respectfully submitted that one faced with the task of compensating for the lack in reciprocity between the reverse link and the forward link in those cases where predistortion is utilized, would not consider the subject matter of the "Roux" reference as to the subject matter of the "Ohgoshi" reference.

It is therefore respectfully submitted that claims 1 and 4 are allowable, as are their respective dependent claims 2 and 5.

With respect to paragraph two (2), claims 3 and 6 to 8 were rejected under 35 U.S.C. § 103(a) as unpatentable over the "Roux" reference in view of the "Yamamoto" reference in further view of the "Ohgoshi" reference and further in view of Rakib, U.S. Patent No. 6,356,555.

Claims 3 and 6 to 8 respectively depend from claims 1 and 4, and are therefore allowable for the same reasons as their respective base claims, since any review of the third-level "Rakib" reference makes plain that it does not cure the critical deficiencies of the "Roux" reference, the "Ohgoshi" reference, and the "Yamamoto" reference. Accordingly, claims 3 and 6 to 8 are allowable.

As further regards the obviousness rejections, to reject a claim as obvious under 35 U.S.C. § 103, the prior art must disclose or suggest each claim feature and it must also provide a motivation or suggestion for combining the features in the manner contemplated by the claim. (See Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 934 (Fed. Cir. 1990), cert. denied, 111 S. Ct. 296 (1990); In re Bond, 910 F.2d 831, 834 (Fed. Cir. 1990)). Thus, the "problem confronted by the inventor must be considered in determining whether it would have been obvious to combine the references in order to solve the problem", Diversitech Corp. v. Century Steps, Inc., 850 F.2d 675, 679 (Fed. Cir. 1998). It is respectfully submitted that the references even if combined would not solve the problems met by the presently claimed subject matter, as referred to in the present application.

The cases of In re Fine, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988), and In re Jones, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992), refer to when an Office Action's assertions that it would have been obvious to modify the reference relied upon will not properly support a § 103 rejection. It is respectfully suggested that those cases make plain that if the Office Action reflects a subjective "obvious to try" standard, it does not reflect the proper evidence to support an obviousness rejection based on the references relied upon. In particular, the Court in the case of In re Fine stated that:

> Instead, the Examiner relies on hindsight in reaching his obviousness determination. . . . **One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.**

In re Fine, 5 U.S.P.Q.2d at 1600 (citations omitted; emphasis added). Likewise, the Court in the case of In re Jones stated that:

> Before the PTO may combine the disclosures of two or more prior art references in order to establish *prima facie* obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. . . .
>
> **Conspicuously missing from this record is any evidence, other than the PTO's speculation (if it be called evidence) that one of ordinary skill . . . would have been motivated to make the modifications . . . necessary to arrive at the claimed [invention].**

In re Jones, 21 U.S.P.Q.2d at 1943 & 1944 (citations omitted; italics in original).

More recently, the Federal Circuit in the case of In re Kotzab has made plain that even if a claim concerns a "technologically simple concept" -- which is not even the case here, there still must be some finding as to the "specific understanding or principle within the knowledge of a skilled artisan" that would motivate a person having no knowledge of the claimed subject matter to "make the combination in the manner claimed", stating that:

> In this case, the Examiner and the Board fell into the hindsight trap. The idea of a single sensor controlling multiple valves, as opposed to multiple sensors controlling multiple valves, is a technologically simple concept. *With this simple concept in*

> *mind, the Patent and Trademark Office found prior art statements that in the abstract appeared to suggest the claimed limitation. But, there was no finding as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of Kotzab's invention to make the combination in the manner claimed.* In light of our holding of the absence of a motivation to combine the teachings in Evans, we conclude that the Board did not make out a proper *prima facie* case of obviousness in rejecting [the] claims . . . under 35 U.S.C. Section 103(a) over Evans.

(See In re Kotzab, 55 U.S.P.Q.2d 1313, 1318 (Federal Circuit 2000) (italics added)). More recent still, in the case of *In re Lee*, 61 U.S.P.Q.2d 1430, 1433-35 (Fed. Cir. 2002), the Court reversed the Board of Appeals for relying on conclusory statements, stating the following:

> *With respect to Lee's application, neither the examiner nor the Board adequately supported the selection and combination of the Nortrup and Thunderchopper references to render obvious that which Lee described. The examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine.* ***This factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority.*** It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher." Thus the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion.
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> . . . .
>
> *In its decision on Lee's patent application, the Board rejected the need for "any specific hint or suggestion in a particular reference" to support the combination of the Nortrup and Thunderchopper references.* ***Omission of a relevant factor required by precedent is both legal error and arbitrary agency***

> ***action.***
>
> ***[The] "common knowledge and common sense" on which the Board relied in rejecting Lee's application are not the specialized knowledge and expertise contemplated by the Administrative Procedure Act. Conclusory statements such as those here provided do not fulfill the agency's obligation.*** [The] Board's findings must extend to all material facts and must be documented on the record, lest the "haze of so-called expertise" acquire insulation from accountability. "Common knowledge and common sense," even if assumed to derive from the agency's expertise, do not substitute for authority when the law requires authority.

Thus, the proper evidence of obviousness must show why there is a suggestion to combine the references so as to provide the subject matter of the claims and its benefits.

In view of the foregoing, it is respectfully submitted that claims 1 to 8 are allowable.

CONCLUSION

In view of the above, it is believed that the rejections have been obviated, and it is therefore respectfully submitted that claims 1 to 8 are allowable. It is therefore respectfully requested that the rejections be reconsidered and withdrawn, and that the present application issue as early as possible.

Respectfully submitted,

Dated: 7/12/2004 By: _____

Richard L. Mayer
(Reg. No. 22,490)

Reg. No. 33,865
Aaron C. Ochs

KENYON & KENYON
One Broadway
New York, New York 10004
(212) 425-7200

CUSTOMER NO. 26646